

# NAVAL HEALTH RESEARCH CENTER

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## ***DEPARTMENT OF THE NAVY SUICIDE INCIDENT REPORT (DONSIR): SUMMARY OF 1999-2000 FINDINGS***

***L. L. Hourani  
S. Hilton  
K. Kennedy  
D. Robbins***

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**NAVAL HEALTH RESEARCH CENTER  
P. O. BOX 85122  
SAN DIEGO, CA 92186-5122**



**BUREAU OF MEDICINE AND SURGERY (MED-02)  
2300 E ST. NW  
WASHINGTON, DC 20372-5300**



# **Department of the Navy Suicide**

## **Incident Report (DONSIR):**

## **Summary of 1999-2000 Findings**



**Laurel L. Hourani, Ph.D., M.P.H., and Susan Hilton, M.A.**  
***Longitudinal Studies and Health Sciences Program***  
**Naval Health Research Center**  
**San Diego, CA**

**LCDR Kevin Kennedy**  
***Suicide Prevention Program Manager***  
**Naval Personnel Command**  
**Millington, TN**

**LT Danisha Robbins**  
***Suicide Prevention Program Manager***  
**Headquarters, Marine Corps**  
**Quantico, VA**

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## Executive Summary

### Background

In 1998, the Department of Defense requested that the services respond to a draft directive that would mandate the completion of a psychological autopsy report in the event of a suicide death. The Department of the Navy (DON) proposed an alternative report—the Department of the Navy Suicide Incident Report (DONSIR)—and sponsored a pilot test of DONSIR's implementation in 1999. DONSIR represents the first systematic collection of epidemiological and risk factor data on suicides of active-duty Navy and Marine Corps personnel. The purpose of DONSIR is to provide DON with the same type of information gathered in the psychological autopsy report, but in a standardized, structured format to accelerate access to the information and reduce sources of bias in data collection.

### Objective

This is the second in a planned series of annual reports that summarize DONSIR data. This report presents findings and recommendations from the first two years (1999-2000) of data collection. The intent is to provide line and medical personnel with information on DON suicide trends and to assist leaders in improving suicide prevention efforts.

### Methods

At the time of each known or suspected suicide in DON since 1999, DON Suicide Prevention Program Managers have provided informational cover letters and DONSIRs to points of contact at decedents' commands. Returned DONSIRs were forwarded to Naval Health Research Center for data entry and analysis. Content analysis was conducted on select qualitative data, and composite variables were created from combinations of quantitative items. Value categories for many quantitative variables were collapsed to minimize the number of cross-tabulation cells with less than 10 observations per cell. Chi-square tests of significance were conducted on cross-tabulations by military branch.

### Results

In 1999 and 2000, 133 DON personnel died by suicide (83 Navy and 50 Marine Corps). This report includes data from 98% (130) of those suicides. Most DON suicides were white males, under 25 years old, and unmarried, corresponding to DON population proportions. Most often the method was by a firearm while off-duty alone at home. The most frequently reported potential risk factor was a romantic-relationship problem, especially among decedents who had been deployed within 3 years prior. The second most frequent risk factor was a job stressor; these top 2 were derived separately by quantitative and qualitative DONSIR items.

### Conclusions

Possibly because of small cell sizes, few tests of association were statistically significant. The likelihood of observing statistically significant associations will increase as the number of cases in the database increases. Meanwhile, population proportions are being sought for a greater number of DONSIR data items. Data presented herein are mainly descriptive, and caution should be used in making generalizations.

## Table of Contents

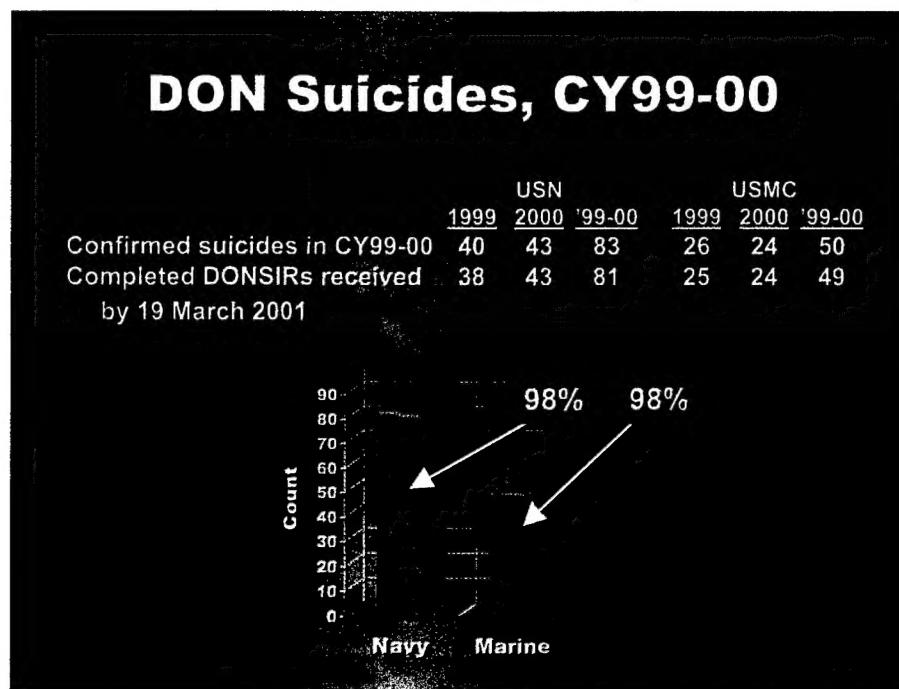
Executive Summary .....	2
Overview .....	4
Background .....	5
Instrument Description .....	5
Methods .....	6
Quantitative Analysis .....	7
Demographic Profile .....	7
Military Career Profile .....	8
Casualty Profile .....	10
Medical and Psychological Status .....	12
Major Potential Risk Factors .....	12
Use of Services .....	17
Content Analysis .....	19
Suicide Stressors .....	19
DONSIR Administrator Feedback .....	19
Recommendations for Program Improvement .....	20
Discussion .....	20
Conclusions and Recommendations .....	21
References .....	23
Appendix A: Major Risk Factor Variable Definitions .....	A-1
Appendix B: Content Analysis of Select DONSIR Data .....	B-1

## Department of the Navy Suicide Incident Report (DONSIR): Summary of 1999-2000 Findings

### Overview

This report summarizes data from the first two years (1999-2000) of data collection using the Department of the Navy Suicide Incident Report (DONSIR). The DONSIR represents the first systematic attempt to collect comprehensive epidemiological and risk factor data on all suicides that occur among active-duty US Navy (USN) and Marine Corps (USMC) personnel. This is the second in a series of annual reports summarizing DONSIR data. The intent is to provide line and medical personnel with information on suicide trends within the Department of the Navy (DON) and to assist leaders in improving suicide prevention efforts.

In 1999 and 2000, 83 Navy and 50 Marine Corps personnel (N=133) died by suicide. This report includes all 1999-2000 DONSIRs received by Navy Personnel Command (NPC) and Headquarters Marine Corps (HQMC) by 19 March 2001. The DONSIR response rate for both services was 98% (81 USN, 49 USMC; n=130). Data were entered into a database created and maintained by the Naval Health Research Center (NHRC).<sup>1</sup> Findings are summarized according to demographics, military career information, casualty data (including suicide method and place information), medical and psychological status, and major potential risk factors.



## **Background**

In 1998, the Department of Defense (DoD) requested that all services respond to a draft directive mandating the completion of psychological autopsy reports for deaths attributable to suicide or undetermined causes. A psychological autopsy (PA) is the process of reconstructing the decedent's likely psychological state in the days or weeks prior to death, and determining how it may have contributed to the death.<sup>2</sup> Due to the relative expense, questionable reliability, lack of standardized procedures, and limited usefulness of psychological autopsies experienced in prior civilian and military studies,<sup>2</sup> DON proposed an alternative report, the DONSIR, and sponsored a pilot test of its implementation. The purpose of DONSIR is to provide DON with the same type of information gathered in the PA report, but collected in a standardized, structured format to accelerate access to the information and reduce sources of bias in the data collection process.

The DONSIR was designed in consultation with psychologists affiliated with NPC, HQMC, Naval Criminal Investigative Service (NCIS), American Association of Suicidology, and NHRC. Input regarding suicide data collection in the military was also obtained from investigators with the Air Force Epidemiology Service, Walter Reed Army Institute for Research, and the National Institute of Mental Health. DONSIR incorporated known suicide risk factors as well as classes of variables recommended for inclusion in a PA report,<sup>3</sup> with emphasis on factors relating to the individual's military life. To ensure that potential risk factors covered by a PA would be covered by DONSIR items, six representative PA reports from the period 1992-1998 were provided by NCIS for review. Draft DONSIRs were coded from information contained in the PA reports, and DONSIR items were added as indicated. The Air Force suicide data collection instrument was also reviewed to ensure that its content was included on the DONSIR form.

## **Instrument Description**

DONSIR items are organized into nine content sections. To facilitate completion, attention was given to clustering items by likely useful sources, which include both documents and people. The "Casualty Information" section, for example, contains many items that can be found in the decedent's Report of Casualty (Form DD-1300) or Personnel Casualty Report (DD-3040-02 or BUPERS 1770-4). DONSIR focuses on timely military sources of data; this expedites completion and avoids placing further emotional burden on the decedent's family. The best sources of information for DONSIR completion are the DD-1300, the decedent's military service record, and the decedent's medical records. Also useful can be the counseling records, autopsy report, toxicology report, investigative reports, and any military personnel who were the decedent's recent associates or contacts or were part of the casualty management process. The most informative people as information sources are the Casualty Assistance Calls Officer (CACO) or NCIS agent, and co-workers; other potentially useful sources include associated supervisors, medical care professionals, mental health professionals, drug and alcohol counselors, family service center professionals, chaplains, military police, and legal officers. It is not necessary to consult most potential sources to complete the DONSIR, and many of these sources are not available within the 4-week turnaround time frame. The DONSIR lists these types of sources on the instruction page, and encourages the point of contact (POC) to consult the best sources available and to leave unknown items blank.

The DONSIR format was designed to minimize translation of responses before data entry into an electronic database. That is, most DONSIR items are quantitative and formatted so that the respondent checks the appropriate pre-coded box or circles the appropriate preprinted number. This format, while more efficient both to complete and to use than qualitative-item format (respondent supplies a narrative response), may not always be comprehensive. However, the final three sections of the DONSIR include qualitative items, some of which intend, in part, to identify risk factors not identified in the quantitative sections. Qualitative items are part of the "Interview" section, which is a one-page form; instructions on the form remind the POC that interviews are to be limited to people directly affiliated with the military (to avoid imposing further emotional burden on the decedent's family). The last page of the DONSIR asks the POC to provide narrative information summarizing identified relevant stressors or events surrounding the suicide, "lessons learned" type information from the command perspective, and prevention program recommendations. The "Feedback" section solicits information intended to identify improvements to the DONSIR and its administration, with quantitative items regarding accessibility of information, time required to complete the instrument, and identification of problematic items. It also contains qualitative items soliciting command concerns about using DONSIR and suggestions for improving the data collection process.

### Methods

In preparation for DONSIR's implementation in 1999, NPC and HQMC Suicide Prevention Program Managers disseminated NPC and HQMC military instructions. At the time of each subsequent suicide or suspected suicide, program managers have provided informational cover letters and DONSIRs to POCs at decedents' commands. Program managers were available for telephone consultation to answer questions about the data collection process. POCs were asked to complete the DONSIR within 4 weeks (3 weeks in 1999), brief their commands on their findings, and forward the form to the corresponding Navy or Marine Corps program manager. Program managers forwarded copies of all DONSIRs received to NHRC for data entry. Data were entered with a double-data-entry reliability-checking scheme into an Access® database that included memo fields to accommodate qualitative items.

Selected qualitative data were quantified via content analysis. The content-analysis method used can be summarized by the following steps that were applied to each item separately: (1) the narrative response was summarized into as many key ideas as were identified by the analyst; (2) these key ideas were grouped across respondents into categories based on similar concept; (3) each concept was assigned an arbitrary, unique code number; (4) each key idea was then assigned the code number of the corresponding category; and (5) the percentage of respondents per category was computed.

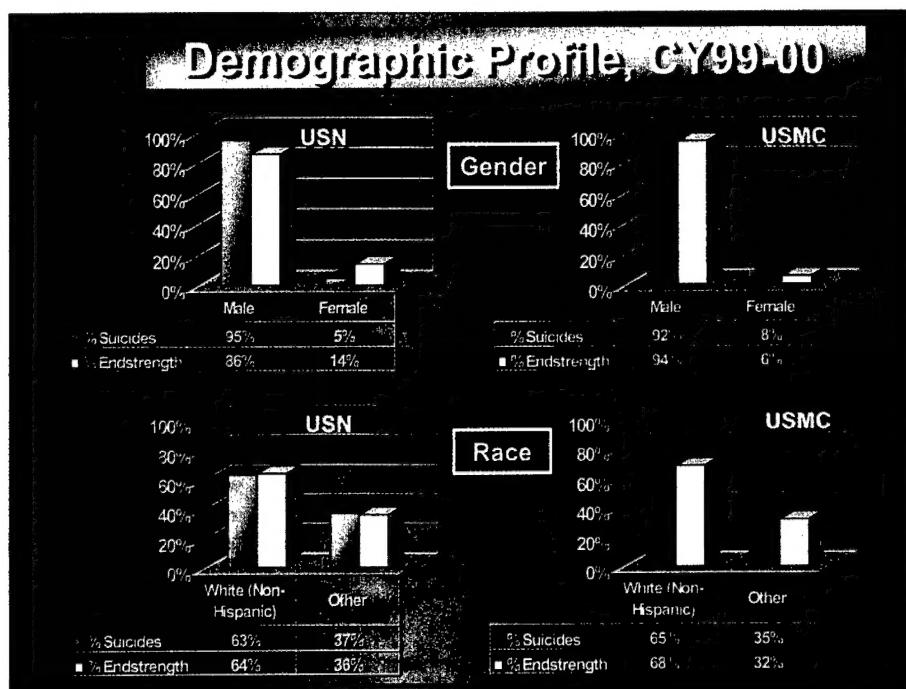
All quantitative data were analyzed with SPSS-PC, Version 10.1 (SPSS, Inc., Chicago, IL). Value categories for some variables were collapsed to minimize the number of cross-tabulation cells with less than 10 observations per cell. Composite variables were created from combinations of quantitative items. Chi-square tests of significance were conducted on all cross-tabulations by military branch. Approximately 430 statistical tests were performed, and 22 associations would be expected to occur at  $p \leq 0.05$  level on the basis of chance. No correction for such possible chance occurrences was attempted. Possibly because of small cell sizes, few tests

of association were statistically significant; nonsignificant values are not reported. The likelihood of observing statistically significant differences will increase as the number of cases in the database increases. Thus, data presented in this report are mainly descriptive, and caution should be used in making generalizations.

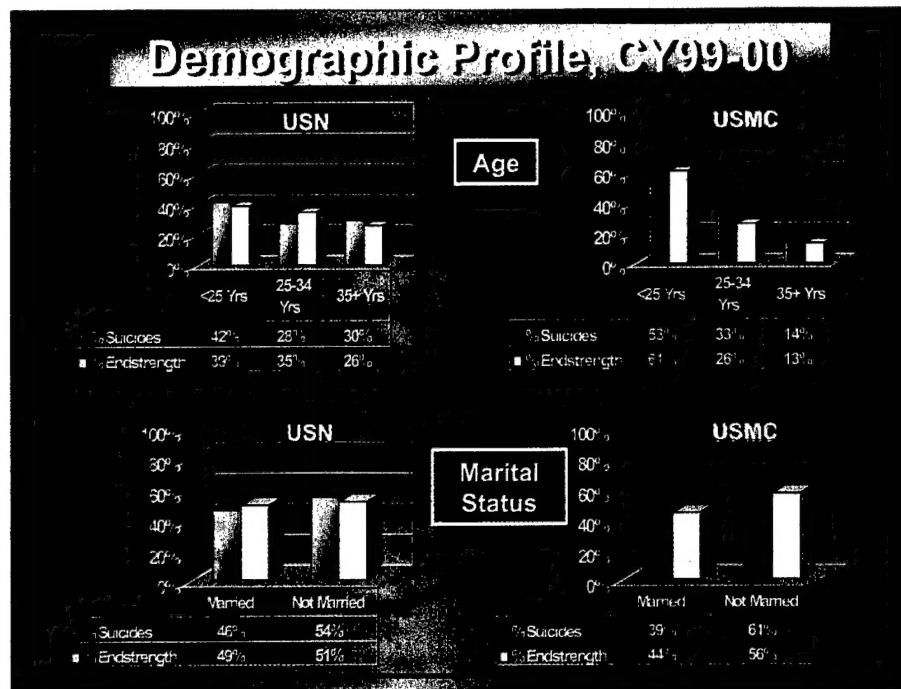
In graphs presenting population proportions, data are from the Defense Manpower Data Center's Information Delivery System Web site (<https://www.dmdc.osd.mil/ids/owa/ids>), with the two yearly averages (as of 2/00 and as of 2/01) averaged per variable category. Missing data were excluded from all suicide data presented in graphs and tables in the main body of this report.

### Quantitative Analysis

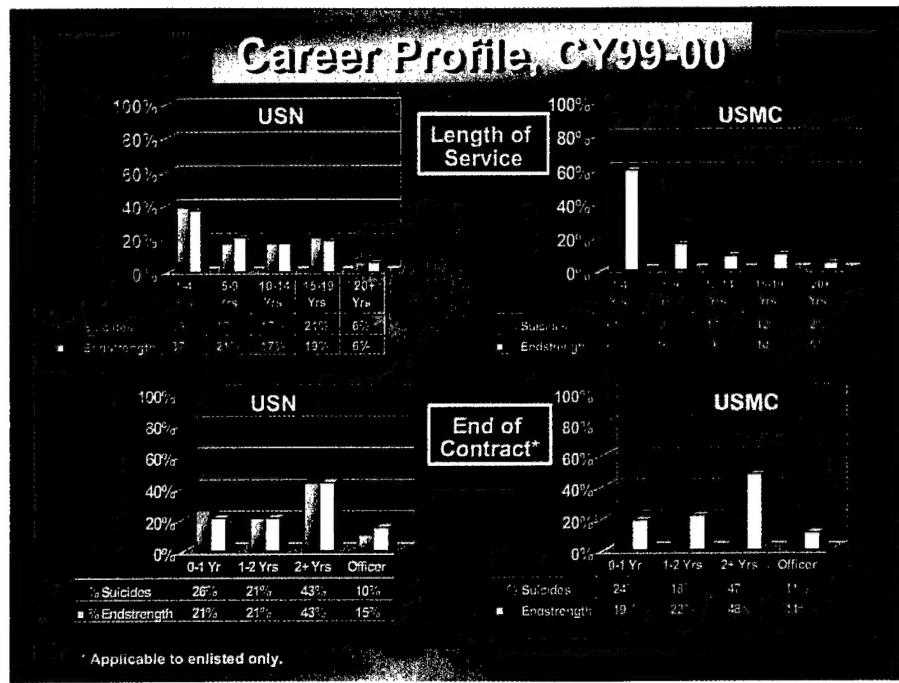
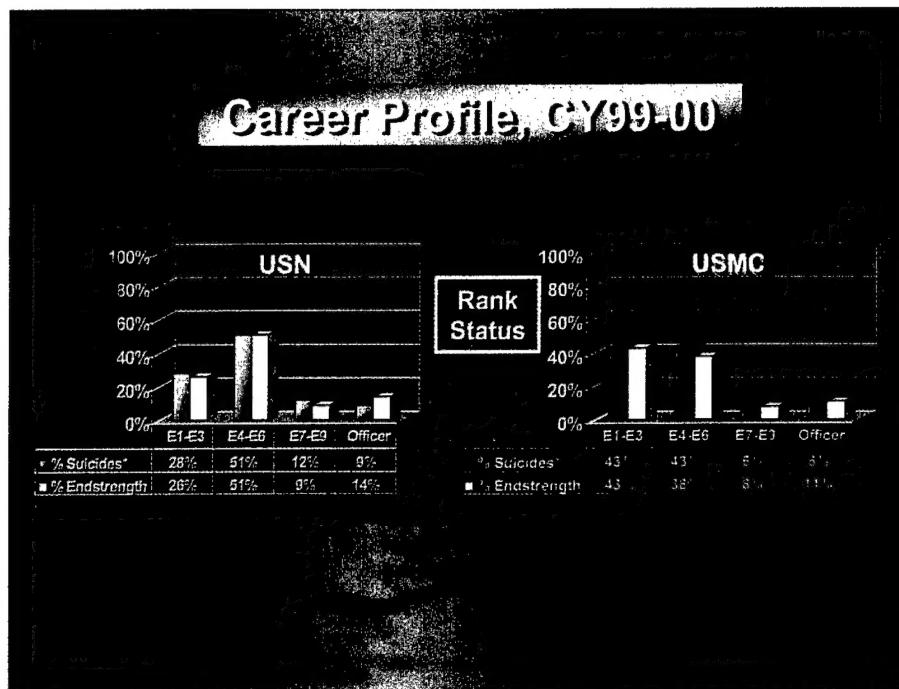
*Demographic Profile.* Ninety-four percent (n=122) of the suicides occurred among males and 6% (n=8) among females. Most suicides (64%) occurred among Caucasians. This is consistent with the higher national rates observed for white males in the civilian sector.<sup>4</sup> Although suicides by females and nonwhites were infrequent, there was a slight trend toward a greater proportion of suicides among Marine Corps females and nonwhite personnel than would be expected given the distribution of these subgroups in the Marine Corps population. This finding is consistent with earlier research suggesting a potentially higher suicide risk in the military than in the civilian sector for these demographic (female and nonwhite) groups.<sup>5,6</sup>



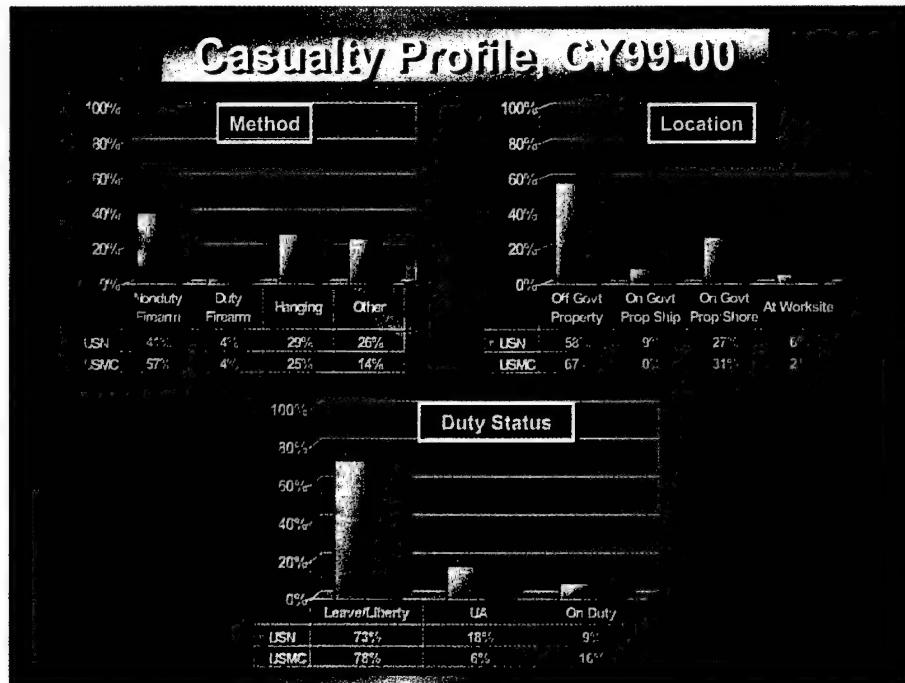
In terms of age demographics, Navy and Marine Corps suicides were reasonably consistent with the services' population distributions. Navy suicides tended to be older and have higher education levels than those in the Marine Corps. The highest relative-risk groups appeared to be Sailors in the younger and older age groups and Marines between 25 and 34 years old. Also, as in the civilian literature, nonmarried personnel were at greater risk for suicide than were married personnel.



**Military Career Profile.** Among Navy personnel, mid-level enlisted personnel (E-4-E-6) were at highest risk for suicide. Among Marines, junior and mid-level enlisted personnel (E-1-E-6) were at highest risk. Officers in both services were at disproportionately lower risk for suicide. The greatest proportion of suicides took place within the first 4 years of service, where the greatest proportion of service members were. The high risk for Marines within the first 4 years showed a dramatic drop to a disproportionately lower risk for those with 5-9 years completed service, followed by a disproportionately high risk again. This may imply risk associated with career transitional points within the Marine Corps. Most enlisted Navy and Marine Corps members were at highest risk within the first few years of their enlistment contract (usually a 4-year contract) reflected by the category of 2 or more years until the expiration of active obligated service. About one quarter (26%) of the suicide cases had completed some type of hazardous duty or combat assignment sometime during their career. Only 9 of the 105 cases with the data available on performance evaluations had a below-average rating on their most recent performance evaluation, and 14 cases had not been recommended for promotion or were considered less than promotable. Among all suicides, 4 had failed selection and 11 had been demoted.



**Casualty Profile.** The most frequent location for suicide among both Navy and Marine Corps personnel was at home, and most often while on liberty. Among those not on liberty or leave, Marine Corps suicides were more likely than Navy suicides to be on duty at the time. However, only 6 of the 130 suicides occurred at the work site. The proportion of Navy suicides who were in Unauthorized Absence (UA) status was three times that of the Marine Corps suicides. Firearms were used in most suicides (51%), but rarely a duty firearm. The use of alcohol was suspected or confirmed in 31% of Navy and Marine Corps combined suicides. Ten suicides (8%) were accompanied by acts of violence. Six of these suicides were Sailors and 4 were Marines. Three Sailors and 2 Marines committed homicide prior to their suicide; in all 5 homicides, the victim was the spouse or significant other. Although 33% of the present cases communicated intent prior to the suicide, the majority did not, which is inconsistent with the civilian literature.<sup>7</sup> Marines were less communicative (only 21% communicated intent) than Sailors (39%), with service differences almost statistically significant ( $p=.052$ ). The majority of suicides in both services occurred when or where no one was likely in range to intervene. The body was most often found by someone who was not a family member or coworker.



Note: "Other" method includes 8 ingestion, 8 carbon monoxide, 6 by jumping from height, 1 suffocation, 1 strangulation, 4 by drowning, 1 by cutting, 1 vehicular, and 1 undetermined.

## Casualty Profile, CY99-00

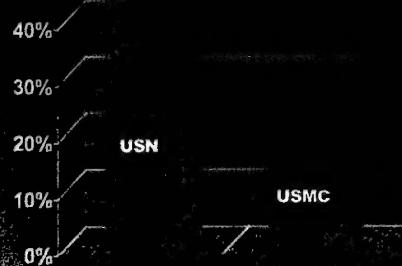
Over one quarter of both USN and USMC suicides used alcohol around time of suicide.



## Casualty Profile, CY99-00

24% of the suicides in both services occurred in close enough proximity for someone to possibly intervene.

39% (n=28) of USN suicides and 21% (n=8) of USMC suicides recently communicated suicide intent.



In the combined years 1999 and 2000, autumn months were the most frequent time of suicide for Navy personnel, whereas most Marine suicides occurred in the summer. Sundays were higher risk for Marines, with approximately one quarter (n=11) of their suicides occurring on that day, whereas Navy's suicides were more evenly distributed across the days of the week, with the highest frequency on Saturday (n=15). Marines were slightly more likely to commit suicide in the evening-to-dawn hours. For one third of the 130 suicides, the day and/or time of suicide act had not been identified by the time of DONSIR completion. Long-term trends in timing of suicides cannot be determined until the sample is larger.

Only 6% of Marine Corps and 16% of Navy suicides occurred outside the continental United States (OCONUS). San Diego, CA, and Camp Pendleton, CA, had the greatest number of suicides for Navy and Marine Corps, respectively, reflecting their relatively large concentrations of personnel. The highest proportion of Navy suicide cases were assigned to a ship (30%), aviation (20%), or a service school (19%). The highest proportion of Marine cases were assigned to a Ground Combat Element unit (23%), aviation (15%), a Combat Service Support Element unit (12%), or a Marine Corps base or station (12%). Most Navy suicides occurred under Echelon 2 of Pacific (42%), Atlantic (32%), or Chief of Naval Education and Training (17%). Most Marine cases occurred under Pacific (26%), Atlantic (16%), or Headquarters (16%).

*Medical and Psychological Status.* Navy suicides were significantly more likely than Marine Corps suicides to have had 3 or more outpatient medical visits in the prior year, to have been on prescribed medications, or to have had a major or chronic medical problem. These findings did not persist after stratifying by age, suggesting that the older age of Navy personnel accounted for the effects. Navy suicides also had higher proportions than Marine Corps suicides of cases with a reported family history of suicide, depression, or substance abuse, a personal history of physical or sexual abuse, and evaluation or treatment for a psychiatric condition. However, these interservice differences did not reach statistical significance. A majority of suicides in both services showed evidence of at least 1 of 20 psychological symptoms. Sailors who committed suicide tended to express or demonstrate feeling depression, rejection, guilt, mood change, and/or anxiety. Marines predominantly expressed or demonstrated depression, rejection, anxiety, and/or failure. Forty-five percent of Navy and 32% of Marine Corps suicides had expressed or demonstrated feelings of depression or desire to die recently prior to the suicide act. About one half (53%) of Marine suicides and 37% of Navy suicides were rated as having had a lack of social support.

*Major Potential Risk Factors.* The most frequently reported potential risk factor for both services in this study's data was a recent relationship problem (61%). Suicides who had been deployed for 30 consecutive days or longer in the last 3 years were significantly more likely to have a recent relationship problem. Among 50 Navy and Marine Corps suicides who had been deployed in the prior 3 years, 74% reported a recent relationship problem compared with 52% among those who had not been deployed.

## Proportion by Month, CY99-00



Note: Percentages total 100% across service.

## Proportion by Day of Week, CY99-00



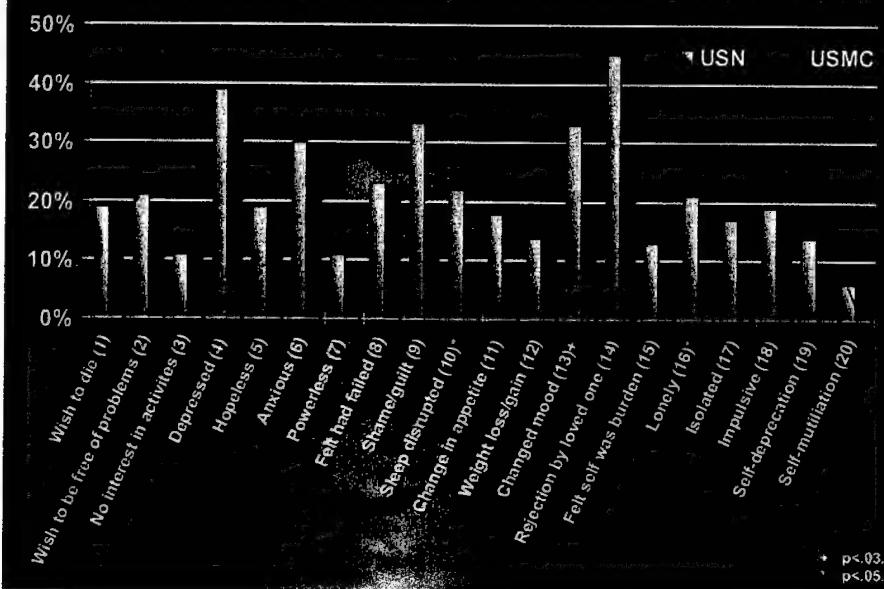
Note: Percentages total 100% across service.

## Medical/Psychological Status Among USN and USMC Suicides, CY99-00

	USN		USMC	
	(N~81)	n	(N~49)	n
Had 3 or more outpatient medical service visits in prior year	40	51	14	37
On prescribed medication	27	36	7	19
Major or chronic medical problem	31	40	13	29
Family history of suicide, depression, substance abuse	20	35	8	28
Evaluated or treated for psychiatric condition	26	33	7	18
Previous suicide attempt or gesture	20	27	8	19
Ever hospitalized for psych condition	13	17	4	10
Victim of physical or sexual abuse	8	11	3	8
Evidence of preservice psych problem	8	10	6	17

Source: No significant differences between services were indicated.

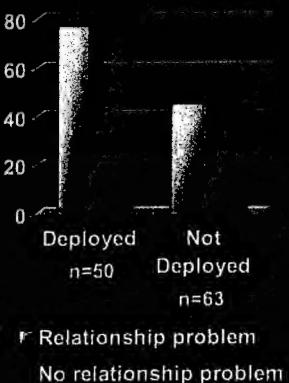
## Psychological Conditions, CY99-00



## An Association Between Relationship Problems and Deployment Among Navy and Marine Corps Suicides, CY99-00

Among Navy and Marine Corps suicides who had been deployed (for 30 consecutive days or longer) at least once in the last 3 years, 74% reported a recent relationship problem, compared with 52% among those who had not been deployed.\*

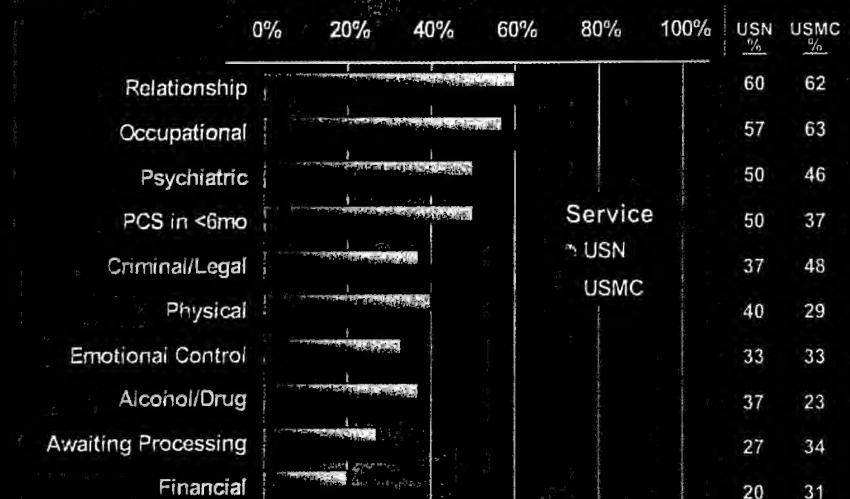
\*  $\chi^2 = 5.5$ ,  $p=.02$



Fifty-seven percent of Navy and two thirds of Marine Corps suicides showed evidence of some type of work-related issue or problem with the military. One third (34%) of Navy cases and 37% of Marine Corps cases reported job assignment dissatisfaction or a desire to leave the military. Significantly more Marines were reported to have had an average or below-average rating on their last performance evaluation. Half of Navy suicides and 37% of Marine Corps suicides were within 6 months of a permanent change of station (PCS). Navy cases were somewhat more likely to have had any physical or psychiatric problem, and Marine cases had a higher proportion of cases with a criminal or legal problem. There was evidence of serious financial problems, such as bankruptcy and bill collectors, in about one third of the Marine cases and one fifth of the Navy cases. One third (34%) of Marine Corps suicides and 27% of Navy suicides were on temporary status (e.g., awaiting Medical Evaluation Board or administrative processing) at the time of the suicide. (See Appendix A for definitions of major risk factor variables.)

When major risk factors were assessed by dichotomized age group, two factors emerged as significantly different between suicide cases younger than age 30 versus those 30 or older. For the younger group, 39% had a substance abuse problem, with a recent alcohol incident or use of substance abuse services within the year prior. Younger suicide cases also were more likely to have experienced a recent relationship problem, a PCS move within 6 months, or a financial problem, but not to a significantly greater extent than for the older age group cases. For cases in the older age group, about half (48%) had been experiencing some sort of physical problem, such as chronic pain or a recent serious injury or disability.

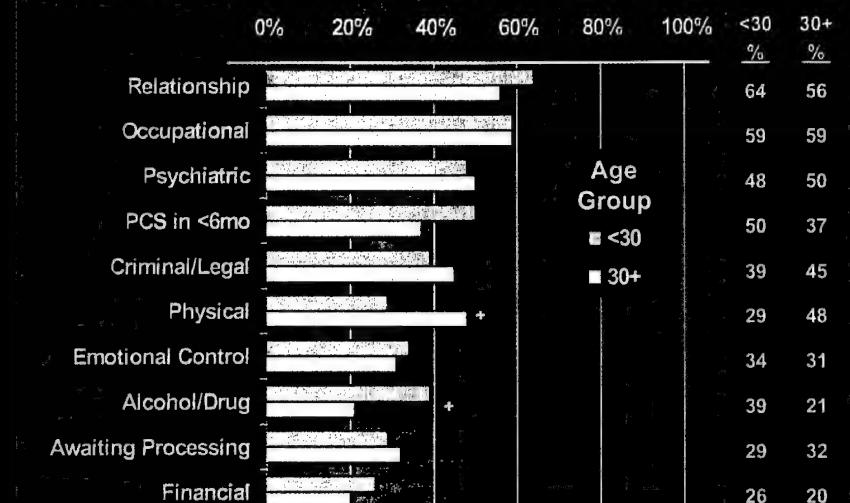
## Major Potential Risk Factors,\* CY99-00



\* See Appendix A for variable definitions.

\*\* indicates that significant differences between services were indicated.

## Risk Factors\* By Age Group, CY99-00



\* See Appendix A for variable definitions.

\*\* indicates that significant differences between age groups were indicated.

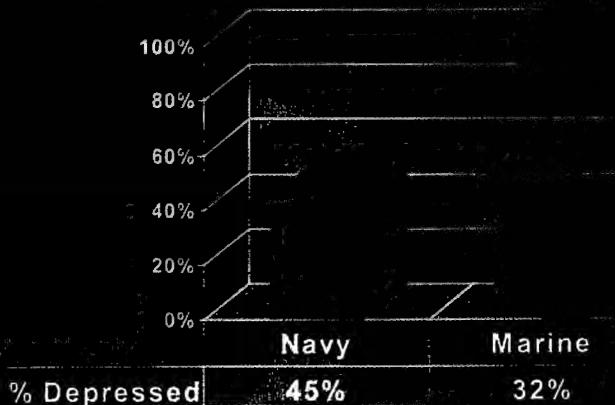
Other potential risk factors included command characteristics or situational factors that may contribute to job stress. The majority of commands in which a suicide occurred had experienced some type of change in command climate, such as a new commanding officer, deployment, high operational tempo, or reorganization. However, such command climate changes may be just as prevalent among commands that did not experience suicides. Forty-six out of the 101 commands with reported data had experienced a prior suicide or attempt within the year, and 73% of suicides had attended some form of suicide awareness training within the prior year.

### Selected Potential Contributing Factors to USN and USMC Suicides, CY99-00

	USN (N~81)		USMC (N~49)	
	n	%	n	%
Had top secret clearance	6	8	1	2
Exposed to hazardous duty or combat	22	30	9	20
Used any medical or counseling services in prior 3 months	43	57	18	44
Expressed or demonstrated at least 1 of 20 psychological conditions	62	80	25	66
Had less than average social support	28	37	20	53
Received average to below-average on last overall performance rating +	23	35	24	60
Had change in command climate *	55	69	37	86
Previous command suicide or attempt	33	48	13	39
Received waiver to enter service	15	21	10	26

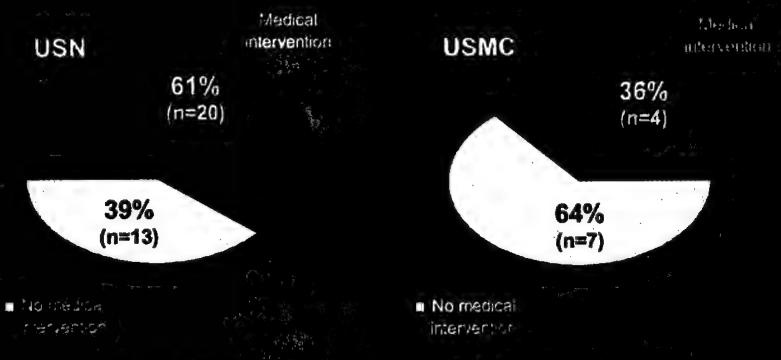
*Use of Services.* Among Navy suicides who had expressed any feelings of depression or desire to die (n=33), 61% had been evaluated or treated within a year prior to the suicide. Among Marine suicides expressing feelings of depression (n=11), only 36% had previously received evaluation or treatment. Forty-seven percent of Sailors and 37% of Marines in the year prior to their suicide used individual counseling or personal-development training services, such as mental health, substance abuse, financial counseling, stress management, anger management, Family Advocacy Program, Family Service Center, or chaplain. Use of medical evaluation and services were more frequent: 72% of Navy and 54% of Marine Corps cases had had at least one medical appointment or contact within the prior year. In terms of recent medical appointments, 47% of Navy cases and 38% of Marine Corps cases saw a medical provider during the 3 months prior to their suicide. Navy suicides (71%) were significantly more likely than Marine Corps (47%) suicides to have had a military outpatient visit in the prior year. A greater proportion of Marine Corps decedents (17%) than Navy decedents (8%) had visited a civilian medical treatment facility in the year prior. There was a tendency for Sailors to have used mental health services (23%) and/or chaplain services (20%), and Marines to have used chaplain services (25%), financial counseling (22%), and/or mental health services (17%) in the year prior.

## Percent Exhibiting Depression\* Prior to Suicide, CY99-00



\* Expressed or demonstrated feelings of depression or desire to die.

## Proportion Exhibiting Depression\* Who Received Medical Intervention, CY99-00

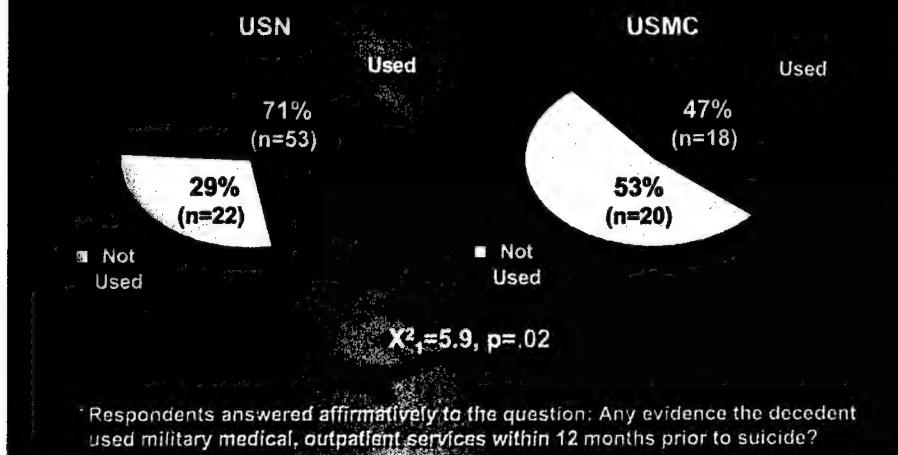


$\chi^2_1=19.7, p=.001$

$\chi^2_1=3.7, p=.056$

\* Expressed or demonstrated feelings of depression or desire to die.

## Used Military Outpatient Medical Services Within 12 Months Prior, CY99-00



### Content Analysis

**Suicide Stressors.** Stressors were addressed by both quantitative and qualitative DONSIR items. In addition to the previously presented major potential risk factors identified by composites of quantitative items, risk factors were identified by POC responses to open-ended items. The items asked the POC to summarize the relevant stressors or events surrounding the suicide. Appendix B presents tabulated category breakdowns. Risk factor categories derived from content analyses were highly similar to those obtained from the quantitative analyses. Interpersonal loss or problem was cited by the most respondents (59%), with the vast majority concerning a relationship with a love interest, and the remaining concerning a relationship with a family member or friend. The second-ranked risk factor was work or job stress, reported by 50% of POCs as suicide relevant. Coping impairment, legal problem, financial problem, and physical pain or impairment were the other important stressors identified. Relevant stressors were indicated as unknown or unidentified more often for Marine Corps suicides (14%) than for Navy suicides (6%).

**DONSIR Administrator Feedback.** The largest proportion of commands completing the DONSIR reported no difficulties or concerns with the report and/or did not offer suggestions for improving the process of data collection (see Appendix B). Of those who did, most were concerned about duplication of effort with other investigations or about availability of record or people information sources. After the 1999 pilot study, turnaround time allowed for DONSIR completion was expanded from 3 weeks to 4, and directions placed stronger emphasis on immediately accessing records targeted for transfer. Subsequent POC suggestions for improvement included delaying DONSIR return until completion of toxicology, autopsy, and NCIS or Judge Advocate General (JAG) reports, designating the CACO or the preliminary inquiry officer as DONSIR POC, and making the report electronic and/or Internet-based.

*Recommendations for Program Improvement.* Several DONSIR items intend to elicit recommendations for improvements to the Suicide Prevention Program. Content analyses of these items (see Appendix B) suggest a general endorsement of the existing program, with one quarter (23%) of DONSIR POCs offering no recommendations, half (51%) of those responding recommending continuation of the existing program, and another quarter (23%) of responding POCs recommending expanded emphasis on an existent program element. Comments also often endorsed postsuicide command action, citing specified actions as implicit recommendations. Recommendations for new program elements included higher standards of mental health screening at service entry, better coordination between command and mental health professionals, more proactive inclusion of spouses in prevention training, and stronger encouragement of member and spouse participation in marriage counseling. The latter notion has particular potential as an effective program element, given that both quantitative and qualitative analyses indicate romantic relationship problems are a top-ranking suicide risk factor.

## **Discussion**

DONSIR's focus to identify suicide risk factors that are military-specific has 2 reasons. One is that the DON population is not a representative subgroup of the US population; it is more predominantly male, white, young, healthy, and employed, among many differences relevant to suicide risk. Therefore, the risk factors most applicable to the US civilian population may not be the leading risk factors in the DON population, making a military focus appropriate. The second reason for an emphasis on military risk factors is that the fundamental purpose of the research is to effect a reduction in the number of DON suicides, and military risk factors are more readily subject to local prevention or intervention efforts. However, this emphasis does not imply nonmilitary risk factors identified by DONSIR should be ignored or are precluded from the development of prevention strategies.

Military risk factors for suicide can be expected to change across time. This is largely because policy changes (in, for example, entry standards, exit requirements, treatment response, or prevention programs) effect the distribution of potential suicide cases in the military population, as well as the severity of potential stressors associated with suicide risk. This is precisely the leverage prevention efforts attempt to exploit. The disadvantage, on the other hand, of a dynamic risk profile is the continuing nature of the need to assess the problem and to readjust prevention strategies over time.

A dynamic risk profile is another argument for retaining qualitative DONSIR items. In addition to helping identify current risk factors not covered by quantitative items, the qualitative items can help identify emergent risk factors. A dynamic risk profile also enhances the value of baseline data by increasing its potential for assessing risk-factor changes over time.

A general limitation of military suicide data is missing or unreported information. This is particularly the case with medical and psychological variables, such as evidence of family history of depression, in which negative responses may reflect lack of information rather than lack of symptomatology. Follow-up acquisition of investigative reports unavailable at the time of DONSIR completion can help minimize missing data and missing evidence occurrence.

Overall comprehensiveness of the DONSIR database, given sufficient cases, allows thorough investigation and analysis of potential modifiable risk factors for suicide in the naval services. As the number of cases in the database increases, specific stressors and problems can be identified and targeted for further examination. Work continues toward expanding capture of available data from endstrength databases and service population studies to compare specific data generated by DONSIR with normative data for Sailors and Marines. In this way specific suicide risk factor comparisons can be made between normative databases and DONSIR databases. Such comparisons have the potential for reliably identifying key differences between suicidal and nonsuicidal naval populations. The statistical power needed to perform more complex analyses will increase as cases accumulate and permit assessment of significant combinations of events and factors leading to a military suicide. The services can be expected to differ on many variables given the diversity of their populations, and some service differences can be used to improve suicide prevention programs. For example, in the present analyses, Marine Corps suicides appear less likely to have histories of initiating medical care than Navy suicides. If this trend continued and there were a consistent elevation in the Marine Corps suicide rate over the Navy, it would be appropriate to suggest an organizational intervention based on continued encouragement of help-seeking behavior. Continued DONSIR database maintenance will support further descriptive and analytic research designed to evaluate and improve DON suicide prevention efforts.

### **Conclusions and Recommendations**

DONSIR represents a significant advance in the capability of DON to track and analyze suicide data. During the initial year of the DONSIR project the high response rate (92%) and quality of information indicated that the instrument fulfilled its purpose of standardizing the review and reporting process on suicides among active-duty personnel. However, it is important not to draw premature conclusions based on the low number of cases accumulated to date. At the DoD level, the services are working toward creating common procedures for collecting information on suicides. It is recommended that DON continue to use DONSIR to improve institutional knowledge about suicides among Sailors and Marines.

Present data establish baselines for monitoring significant stressors and problems for Sailors and Marines, such as relationship problems, medical and psychological problems, and alcohol abuse. These data can be used to support identification of risk factors and intervention opportunities. For example, the age differences for physical and substance abuse problems indicate intervention opportunities targeting members over age 30 presenting with serious physical complaints or members under age 30 in treatment or legal proceedings for alcohol abuse. The data are also consistent with leadership's continued attention to early intervention for problems contributing to suicide, and encouragement of Sailors and Marines to seek help early before problems escalate into crises.

To make further use of data collected with DONSIR at the local level, the authors recommend those tasked with completing the DONSIR brief their commanding officers on the results in the invited presence of members of the local support team, including medical care professionals, chaplains, supervisors, family advocacy professionals, legal officers, and counselors. The

support team briefing could encourage integration of services and exchange of information among local support staff.

## Conclusions

- The DONSIR represents a significant advance in the capability of DON to track and analyze suicide data.
- Though DONSIR data fields are continuing to be refined, the quality of information received thus far and the high response rate (98%) suggest the DONSIR is fulfilling its purpose of standardizing the review and reporting process on suicides among DON active-duty personnel.
- The present data establish baselines for monitoring significant suicide risk factors for Sailors and Marines, including relationship problems, occupational issues, medical and psychological problems, and alcohol abuse.

## Recommendations

- It is strongly recommended that DON continue to use the DONSIR to improve institutional knowledge about suicides among Sailors and Marines and to strengthen prevention programs.
- These data indicate that continued leadership attention should be given to
  - early intervention for problems that contribute to suicide and
  - support for Sailors and Marines to seek help before problems escalate into crises.
- Include in the POC's post-DONSIR briefing to the command the members of the support team (e.g., chaplains, family advocacy professionals, medical care professionals, counselors, legal officers, and supervisors) to encourage the integration of support services and the exchange of information between the helping staff.

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## Appendix A

### Major Risk Factor Variable Definitions

**Relationship Problem:** (affirmative response to either of 2 items)

Experienced a recent relationship problem (Mil26L=2,3);  
Any recent death of loved one, relative, friend, Sailor/Marine (Mil26M=2,3).

**Occupational Problem:** (affirmative response to any of 12 items)

Below-average performance rating in either of last 2 evaluations (Mil5A,Mil6A=3);  
Decrease over last 2 performance ratings ([Mil6A – Mil5A]);  
Failed the last PRT or in remedial PRT (Mil7=1);  
Promotion status on last evaluation was “progressing,” “unsatisfactory,” or “not recommended” (Mil8=4,5,7);  
Recently failed selection or denied reenlistment (Mil9=2);  
Ever demoted (Mil10=2,3);  
Job dissatisfaction, other work problems, documented problems with authority, recent job loss, or military legal or admin problems (Mil26B,Mil26C,Mil26E,Mil26F,Mil26G=2,3);  
Poorer than usual supervisor/coworker rating of military performance/work behavior (MIL22=1).

**Psychiatric Problem:** (affirmative response to any of 5 items)

History of violent/aggressive behavior, problems regulating emotions (Mil26N,Mil26O=2,3);  
Evidence of preservice psychiatric problems (Med2=2);  
Ever evaluated/treated for psychiatric condition (Med12A=2-4) (exclude case if missing Med12A and negative responses on other items);  
Used mental health services in past 12 months (Use1E=2-4).

**PCS Within 6 Months:** (affirmative response to either of 2 items)

Experienced PCS within 6 months prior or expected PCS within 6 months following the incident (Mil14,Mil15=2).

**Criminal/Legal problem:** (affirmative response to any of 4 items)

Under investigation for criminal behavior (Mil26H=2,3);  
Subject of civil legal difficulty (Mil26J=2,3);  
Awaiting admin separation or other legal judgment/processing (Med15A1,Med15A4=2).

**Physical Problem:** (affirmative response to any of 4 items)

Recent catastrophic diagnosis, chronic illness/condition, career-ending injury, or other physical problem (Med5A,Med5B,Med5C,Med5D=2,3).

**Emotional Control:** (affirmative response to either of 2 items)

History of violent/aggressive behavior (Mil26N=2,3);  
Problems regulating emotions (e.g., anger, anxiety) (Mil26O=2,3).

**Alcohol/Drug Problem:** (affirmative response to any of 3 items)

Any alcohol-related problems within last year (Med6A=2,3) (exclude case if missing Med6A and negative responses on other items);  
History of substance abuse (other than alcohol or food) (Med9A=2);  
Used substance abuse services within last year (Use1D=2-4).

**Financial Problem:** (affirmative response to either of 2 items)

Evidence of any serious financial problems (Mil26I=2,3) (exclude case if missing Mil26I and negative response to second item);  
Used financial counseling in last 12 months (Use1F=2-4).

**Awaiting Processing:** (affirmative response to any of 4 items)

Awaiting separation, board, or other judgment/processing (Med15A1,Med15A2,Med15A3, Med15A4=2).

## Appendix B

### Content Analysis of Select DONSIR Data, 1999-2000 Cases (N=130)

#### **DONSIR items analyzed:**

- Page 6, #5: What questions/concerns does the command have about the Suicide Incident Report or process?
- Page 6, #6: What suggestions do you or your command have for improving the process of data collection?
- Page 8, #1: What were the relevant stressors/events surrounding this suicide?
- Page 8, #2: Has this incident prompted any formal or informal changes in command procedures?
- Page 8, #3: How do you think this incident will/should change suicide prevention efforts of people at your command (including informally)?
- Page 8, #4: Based on the review of this incident, do you or your command have any recommendations for HQ to improve the Suicide Prevention Program?

**Content Analysis Steps:** 1. Summarize each respondent's narrative response into key idea(s).  
 (conducted per item) 2. Group key ideas across respondents into categories based on similar concept.  
 3. Assign each category an arbitrary, unique code number, and code each key idea per respondent.  
 4. Compute summary statistics per category code, controlling for same-case code duplication.

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#### **Item: "What questions/concerns does the command have about the Suicide Incident Report or process?"**

	Respondents					
	USN (n=56)		USMC (n=33)		Total (n=89)	
	n	%	n	%	n	%
<b>Categories: DONSIR Concerns</b>						
Required Effort	12	21	2	6	14	16
Availability of Record Sources	5	9	9	27	14	16
Availability of People Sources	5	9	6	18	11	12
Data Utility	6	11	2	6	8	9
None	29	52	19	58	48	54
(blank)	25	*	16	*	41	*

\* 32% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

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#### **Item: "What suggestions do you or your command have for improving the process of data collection?"**

	Respondents					
	USN (n=54)		USMC (n=30)		Total (n=84)	
	n	%	n	%	n	%
<b>Categories: Data Collection</b>						
Improve Information Access	15	28	3	10	18	21
Facilitate Command Effort	7	13	7	23	14	17
Provide Electronic Version	9	17	2	7	11	13
Reduce Command Effort	4	7	5	17	9	11
None	22	41	14	47	36	43
(blank)	27	*	19	*	46	*

\* 35% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

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**Item: "What were the relevant stressors/events surrounding this suicide?"**

Code	Relevant Stressors/Events	Respondents					
		USN (n=78)		USMC (n=43)		Total (n=121)	
n	%	n	%	n	%	n	%
0	Interpersonal With Mate/Offspring	46	59	20	47	66	55
2	Work Stress	40	51	21	49	61	50
3	Coping Impairment	40	51	16	37	56	46
4	Legal Problem	27	35	11	26	38	31
1	Other Interpersonal Loss/Problem	12	15	4	9	16	13
6	Financial/Convenience Hardship	7	9	8	19	15	12
5	Physical Pain/Impairment	10	13	3	7	13	11
8	No Stressors Identified / Unknown	5	6	6	14	11	9
9	(blank –both items)	3	*	6	*	9	*

\* 7% of 130 (81 USN and 49 USMC) respondents left both items blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

**CY2000 Item: "Has this incident prompted any formal or informal changes in command procedures?"**

**CY1999 Item: "What are specific "lessons learned" by the command from this incident?"**

Categories: Procedural Changes or Lessons	Respondents					
	USN (n=70)		USMC (n=37)		Total (n=107)	
n	%	n	%	n	%	n
New Procedures Recommended/Instituted	21	30	12	32	33	31
Awareness/Responsiveness Increased	10	14	6	16	16	15
Supplemental Training/Counseling Planned/Done	8	11	4	11	12	11
(Only:) No / None / Current Procedures Continuing	35	50	16	43	51	48
(blank)	11	*	12	*	23	*

\* 18% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

**Item: "How do you think this incident will/should change suicide prevention efforts of people at your command (including informally)?"**

Categories: Effort Changes	Respondents					
	USN (n=31)		USMC (n=14)		Total (n=45)	
n	%	n	%	n	%	n
Awareness/Responsiveness Increased	15	48	3	21	18	40
New Procedures Recommended/Instituted	3	10	2	14	5	11
Supplemental Training/Counseling Planned/Done	3	10	1	7	4	9
(Only:) No / None / Current Procedures Continuing	13	42	8	57	21	47
(blank)	50	*	35	*	85	*

\* 65% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

**Two Previous Items Combined:**

**“Has this incident prompted any formal or informal changes in command procedures?”**

**“How do you think this incident will/should change suicide prevention efforts of people at your command (including informally)?”**

	Respondents					
	USN (n=70)		USMC (n=38)		Total (n=108)	
	n	%	n	%	n	%
<b>Categories: Procedural Changes or Lessons</b>						
New Procedures Recommended/Instated	23	33	14	37	37	34
Awareness/Responsiveness Increased	24	34	9	24	33	31
Supplemental Training/Counseling Planned/Done	10	14	5	13	15	14
(Only:) No / None / Current Procedures Continuing	24	34	12	32	36	33
(blank)	11	*	11	*	22	*

\* 17% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

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**CY2000 Item: “Based on the review of this incident, do you or your command have any recommendations for HQ to improve the Suicide Prevention Program?”**

**CY1999 Item: “Based on the DONSIR review into this incident, what are the recommendations for command action?”**

	Respondents					
	USN (n=65)		USMC (n=35)		Total (n=100)	
	n	%	n	%	n	%
<b>Categories: Recommendations</b>						
Implement a New Program Element	16	25	8	23	24	24
Expand Emphasis on a Current Element	14	22	9	26	23	23
Take Post-Suicide Action(s) at the Command	9	14	5	14	14	14
(Only:) No / None / Continue Current Program	34	52	17	49	51	51
(blank)	16	*	14	*	30	*

\* 23% of 130 (81 USN and 49 USMC) respondents left the item blank; those cases are excluded from computation of tabled percent values. Due to multiple responses per item, values sum to more than 100%.

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### 13. SUPPLEMENTARY NOTES

#### 14. ABSTRACT (maximum 200 words)

This is the second in a series of annual reports that summarize data collected by the Department of the Navy Suicide Incident Report (DONSIR). DONSIR provides the first systematic collection of epidemiological and risk factor data on all suicides of active-duty Department of the Navy (DON) personnel. The intent is to provide line and medical personnel with information on suicide trends within DON and to assist leaders in improving suicide prevention efforts. This report presents findings and recommendations from the first two years (1999–2000) of data collection. In 1999 and 2000, 83 Navy and 50 Marine Corps personnel died by suicide; DONSIR data were captured on 98% (130) of those suicides. Most DON suicides were white males, under 25 years old, and unmarried, corresponding to DON population proportions. Most often, the method was by a firearm while off-duty alone at home. The most frequently reported potential risk factor was a romantic-relationship problem, especially among decedents who had been deployed within 3 years prior. The second-ranked suicide risk factor was a job stressor or occupational problem. These top-ranked risk factors were derived separately by quantitative and qualitative DONSIR items. Possibly because of small cell sizes, few tests of association were statistically significant, and the findings remain descriptive. Caution should be used in making generalizations. As the number of cases in the database increases, the likelihood of observing statistically significant associations will increase. Present data establish baselines for monitoring relevant stressors and major risk factors.

### 15. SUBJECT TERMS

suicide, suicide prevention, suicide assessment in the military, Navy, Marine Corps, incidence, registries, risk factors, epidemiology

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